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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,119	02/17/2004	Oliver Horn	1212.001	6508
25215	7590	01/25/2006	EXAMINER	
DOBRUSIN & THENNISCH PC 29 W LAWRENCE ST SUITE 210 PONTIAC, MI 48342			FORD, JOHN K	
			ART UNIT	PAPER NUMBER
			3753	

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/780,119

Applicant(s)

HORN ET AL.

Examiner

John K. Ford

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on Nov. 10, 2005
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 3-6, 9-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 7, 8 and 13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 03/08/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Applicant's response of November 10, 2005 has been studied carefully. The election of Figure 1, as shown (without the modification disclosed in paragraph 0025 of the specification), without traverse, is acknowledged. Claims 1, 2, 7, 8 and 13 have been identified as readable on the elected species. Claims 3-6 and 9-12 are withdrawn at this time. As counsel is probably unaware, the assignee has multiple related applications pending related to this technology. Two of them have been assigned to the undersigned. Those serial numbers are SN 10/658746 and SN 10/944401. If there are other related applications, pursuant to the authority granted in MPEP 2001.06(b), this examiner is requiring their disclosure in response to this office action.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 is not descriptive of the elected species of Figure 1. Figure 1 discloses only one latent cold holdover and claim 13 claims a plurality of latent cold holdovers. Amend claim 13 to be descriptive of the elected species or explain in detail, if possible, why the examiner is in error on this point or designate claim 13 as non-elected.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2 and 13 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Rafalovich (6,059,016) or Khelifa et al (6,260,376).

In Figure 32, Rafalovich discloses an electrically driven compressor 488 (col. 32, line 42), condenser 490, expansion device 492, a thermal storage system 512 having a latent heat holdover 391 (phase change material) and a coolant circuit formed by heat exchanger 166, air heat exchangers 514 and 516, closed heat transfer loop 156 and a pump 150. While element 492 is referred to as an expansion device and not specifically an expansion valve, the terms are often used synonymously. To that extent Rafalovich is deemed to be a proper reference under 35 USC 102(b). Nevertheless, if necessary, Rafalovich discloses an expansion valve 136 in the embodiment of Figure 5 and it would have been obvious to have used an expansion valve in the Figure 32

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embodiment to perform the expansion of the refrigerant. Many such expansion valves offer the advantage of improved control over the refrigerant expansion. To the extent that claim 13, with its recitation of a plurality of latent cold holdovers is readable on the elected species of Figure 1, it is met by the reference. See the 35 USC 112, second paragraph, rejection above.

The detailed description of Figures 2 and 3 of Khelifa appears to show all of the claimed subject matter and the reference is incorporated here by reference by way of explanation. Given that it shares an inventor with the inventive entity of the current application, no further explanation by this examiner is deemed necessary.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rafalovich et al or Khelifa et al as applied to claims 1 and 2 above, and further in view of Kang (WO 01/40005).

In column 35, lines 13-16, Rafalovich discloses that the embodiment of Figure 32 (among others) can be used in an electric vehicle or a hybrid electric vehicle and this also appears to be true of Khelifa. Rafalovich nor Khelifa do not disclose the conventional details of such vehicles such as an engine driven generator. On page 8, lines 9-17, Kang discloses that electrically powered air conditioning systems using and electrically powered compressor (such as disclosed by Rafalovich and Khelifa) can be powered by an engine driven generator 17 that is directly connected to and driven by a crankshaft of an engine (not shown) of the vehicle.

To have driven the electrically driven compressor 488 of Rafalovich or the electrically driven compressor 19 of Khelifa, as disclosed in claim 7 of Khelifa, by an engine driven generator 17 that is directly connected to and driven by a crankshaft of an engine (not shown) of the vehicle, in a hybrid electric vehicle installation (as contemplated in column 35, lines 13-16 of Rafalovich) would have been obvious to one of ordinary skill in the art since this appears to be conventional and is clearly taught by Kang. Such a modification would advantageously permit optimal use of battery and engine resources in a hybrid vehicle.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rafalovich (6,059,016) or Khelifa et al (6,260,376) as applied to claim 13 above, and further in view of Kanada (5,957,193) or Carr (5,277,038).

While no details of the arrangement of the phase change materials in Rafalovich (6,059,016) or Khelifa et al (6,260,376) is shown, it is known from either one of Rafalovich (6,059,016) or Khelifa et al (6,260,376) to have used a plurality of containers to contain the heat storage material. See the plurality of containers shown in Figures 9-20D of Kanada and see Figure 1A of Carr, containers 83, 85 and 87. To have provided the system of Rafalovich (6,059,016) or Khelifa et al (6,260,376) with multiple containers of phase change material as taught by either of Kanada (5,957,193) or Carr (5,277,038) to advantageously permit the use of salt hydrates and other phase change

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materials and assure improved distribution of heat without necessarily resorting to agitation.

Any inquiry concerning this communication should be directed to John K. Ford at telephone number 571-272-4911.



**John K. Ford**  
**Primary Examiner**